University of Bahrain

CE -- CIT -- UOB

TEST 1 (3 August 2015) ITCE263/EEG261: Electronics 1

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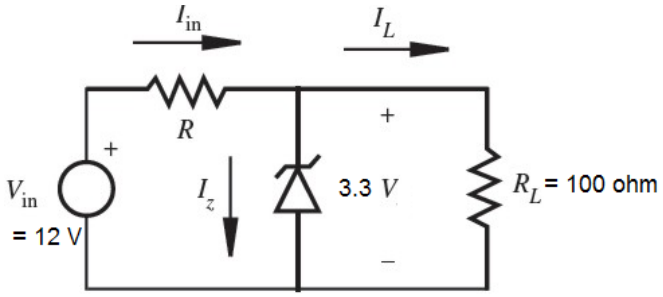
Q1. [30 marks]

Assume a **3.3 volt** Zener diode with **Iz_{min} = 5 mA** and **Pz_{max} = 1 W**:

1. If **R = 200 ohm**, Find **I_{in} , I_z** and **I_L**
2. Find **minimum value of R** and **maximum value of R** that can be used in this simple voltage regulator (stabilizer) circuit



Q2. [30 marks]

A silicon diode has **a forward voltage = 0.6 volt** when the **current = 5 mA**. Find its static and dynamic resistances at **forward voltage = 0.7 volt**

Q3. [40 marks]

Assume β = 100

1. Find R for V_{CE1} = 6 volt
2. Find Ic, I_E , I_B , V_{CE} and V_{CB} in both transistors
3. If you want to increase the 5 k resistance, what maximum value can you reach?